Patent Claims

1. A method for assisting the driver of a vehicle (10) when performing a driving maneuver, a reference trajectory (16) corresponding to the driving maneuver being determined, along which the vehicle (19) is to be moved, and the steering wheel position to be set in each case and controlling the vehicle (10) along the reference trajectory (16, 19) being indicated to the driver during the driving maneuver,
characterized in that, in the event of a steering angle deviation (d_{LW}) between the actual steering angle (δ_{act}) actually set by the driver and the desired steering angle (δ_{des}) corresponding to the requested steering wheel position, the vehicle longitudinal speed (v) is influenced independently of the driver.

2. The method as claimed in claim 1, characterized in that the influence on the vehicle speed is dependent on the magnitude of the steering angle deviation (d_{LW}).

3. The method as claimed in claim 1 or 2, characterized in that, during the driving maneuver, depending on the current vehicle position ($x_{F,act}/y_{F,act}/\psi_{F,act}$), a steering angle tolerance band (δ_{min} to δ_{max}) which determines the permissible steering angle is determined and the influence on the vehicle longitudinal speed (v) depends on the tolerance margin (δ_{des} - δ_{min} or δ_{max} - δ_{des}) between the desired steering angle (δ_{des}) and the tolerance band limits (δ_{min} or δ_{max}).

4. The method as claimed in claim 3, characterized in that, in order to determine the steering angle tolerance band, a rotational angle tolerance band is determined, the actual rotational angle ($\psi_{F,act}$) between the vehicle longitudinal axis (71) and a coordinate axis (y) of a stationary coordinate system (22) being enlarged or reduced until it is just still possible to determine a trajectory to the target position (17).

5. The method as claimed in one of claims 2 to 4, characterized in that the vehicle longitudinal speed (v) is chosen to be lower, the greater the magnitude of the steering angle deviation (d_{LW}) and/or the smaller the magnitude of the tolerance margin ($\delta_{des}-\delta_{min}$ or $\delta_{max}-\delta_{des}$).

6. The method as claimed in one of claims 1 to 5, characterized in that the vehicle longitudinal speed is influenced by means of speed regulation.

7. The method as claimed in one of claims 1 to 6, characterized in that the vehicle (10) is retarded down to a standstill and is kept at a standstill as long as, on the basis of the existing steering angle deviation (d_{LW}), the vehicle (10) would assume a vehicle position during onward travel from which the target position (17) can no longer be reached without a shunting interruption to the driving maneuver.

8. The method on 7, characterized in that the vehicle (10) is accelerated again independently of the driver if the driver sets a steering wheel position which leads to a permissible steering angle deviation (d_{LW}).

9. The method as claimed in one of claims 1 to 8, characterized in that the steering wheel position to be set is indicated by means for acoustic driver information and/or means for optical driver information (13) and/or means for tactile driver information (40 and 41).

10. The method as claimed in claim 9, characterized is that the means for tactile driver information (40 and 41) have means for changing the steering wheel torque to be applied by the driver.

11. The method as claimed in one of claims 1 to 10, characterized in that the driving maneuver is a parking maneuver and the reference trajectory (16) indicates the ideal route from the actual vehicle position ($x_{F,act}/y_{F,act}/\psi_{F,act}$) into the parking position (17).

12. The method as claimed in one of claims 1 to 11, characterized in that, in the case of a vehicle (10) in trailer operation, each vehicle position along the actual reference trajectory (19) is assigned a desired trailer angle (β_{des}) between the vehicle longitudinal axis (71) and the trailer longitudinal axis (72), and in that the actual trailer angle (β_{act}) is determined and compared with the corresponding desired trailer angle (β_{des}), the vehicle longitudinal speed (v) being influenced independently of the driver in the event of an angular deviation between desired trailer angle (β_{des}) and actual trailer angle (β_{act}).

13. A device for implementing a method for assisting the driver when performing a driving maneuver as claimed in one of claims 1 to 11, having means (12) for determining a reference trajectory (16)

corresponding to the driving maneuver, and means (13; 40 and 41) for indicating the steering wheel position to be set by the driver and controlling the vehicle (10) along the reference trajectory (19), characterized in that the vehicle longitudinal speed (v) is influenced by retardation means (50) and/or forward drive means (51) that can be activated independently of the driver if a steering angle deviation (d_{LW}) between the actual steering angle (δ_{act}) actually set by the driver and the desired steering angle (δ_{des}) corresponding to the requested steering wheel position is established in an evaluation device (12).

14. The device as claimed in claim 13, characterized in that means (12) are provided for determining the desired trailer angle (β_{des}) between the vehicle longitudinal axis (71) and the trailer longitudinal axis (71), and means for determining the actual trailer angle (β_{act}), in that the evaluation device (12) compares the desired trailer angle (β_{des}) and the actual trailer angle (β_{act}), and in that the retardation means (50) and/or forward drive means (51) of the vehicle (10) are activated in the event of an angular deviation being established between the desired trailer angle (β_{des}) and the actual trailer angle (β_{act}).